

**ORIGINAL**

Before the  
**FEDERAL COMMUNICATIONS COMMISSION**  
 Washington, D.C. 20554

DEC 18 2000

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the Matter of )

)  
 Amendment of the Commission's Rules )  
 With Regard to the 3650-3700 MHz )  
 Government Transfer Band )

ET Docket No. 98-237 /  
RM-9411

)  
 The 4.9 GHz Band Transferred from )  
 Federal Government Use )

WT Docket No. 00-32

**PETITION FOR RECONSIDERATION OF THE FIRST REPORT AND**  
**ORDER**

**Summary**

Inmarsat Ltd. ("Inmarsat"), by counsel and pursuant to Section 1.429 of the Commission's rules, hereby submits a petition for reconsideration of certain aspects of the First Report and Order in the above-captioned proceeding (the "Order").<sup>1</sup> In particular, Inmarsat urges the Commission to reconsider its decision to reject sharing of the 3650-3700 MHz band on a primary basis between Fixed Satellite Service ("FSS") and Fixed Service ("FS") terrestrial operations. Inmarsat believes that the Commission ignored ample record evidence demonstrating that such services could share the band on a co-primary basis equitably. Inmarsat also believes that the Commission overestimated the value of this band for potential fixed service development and did not sufficiently consider the hardship that would result from the reduction of FSS service in the band to secondary status. Inmarsat further believes that the Commission acted arbitrarily in establishing November 30, 2000, as the cut-off date after which FSS applications would no longer receive grand-fathered co-primary status in the band. For all of these reasons, Inmarsat respectfully requests

<sup>1</sup> Amendment of the Commission's Rules with Respect to the 3650-3700 MHz Government Transfer Band, ET Docket No. 98-237, First Report and Order and Second Notice of Proposed Rulemaking, FCC 00-363, released October 24, 2000 (the "Order"). Concurrently herewith, Inmarsat also is filing comments in response to the Second Notice of Proposed Rulemaking in this docket.

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that the Commission reconsider the Order and amend its rules to allow continued FSS use of the 3650-3700 MHz band on a co-primary basis. Failing this, Inmarsat urges the Commission to extend the FSS application filing period for a reasonable period after the effectiveness of the new rules. Inmarsat proposes a cut-off date no earlier than December 31, 2001.

### **Statement of Interest**

Although Inmarsat did not participate directly in the first comment rounds,<sup>2</sup> Inmarsat is nonetheless directly affected by this proceeding. As the Commission is well aware, Inmarsat, in conjunction with its recent privatization, is undertaking a major expansion of its satellite fleet in order to implement the next generation of satellite technology and to meet the increasing growth in demand for satellite communications. Specifically, Inmarsat is purchasing three Inmarsat-4 satellites equipped with feeder links in the band 3550-3700 MHz, at least one of which will provide services to U.S. territory.

As the Commission is well aware, congestion in the C-band for international services has reached critical proportions. The Commission has already noted the need for relief of congestion in the 3700-4200 MHz band.<sup>3</sup> However, its solution of maintaining the FSS allocation in the extended C-band, but changing it to secondary status, is wholly inadequate to relieve this congestion. A secondary allocation only results in uncertainty in the provision of high quality, high reliability services.<sup>4</sup>

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<sup>2</sup> Prior to its privatization on April 15, 1999, Inmarsat's interests were represented in this proceeding by Comsat, the former U.S. signatory to the Inmarsat Convention.

<sup>3</sup> Order at ¶ 2.

<sup>4</sup> Furthermore, contrary to the Commission's observation in Paragraph 21 of the Order, it cannot be assumed that the continued availability of the 3600-3650 MHz band helps in providing this spectrum relief. This band continues to be allocated to Governmental Services, which include high power and long range radiolocation services. Indeed restrictions have been placed by the NTIA which have essentially barred the FSS usage of bands below 3650 MHz in the United States.

Thus, Inmarsat is concerned that by re-designating FSS (space-Earth) in the band 3650-3700 MHz to secondary status and not providing protection for new earth stations, the Commission will seriously curtail the growth both of Inmarsat's capacity to meet service demands as well as that of other current and future satellite service providers. Inmarsat believes that the interest of the U.S. public will not be served through the denial of reliable and efficient satellite communication services provided by operators using this band for satellite feeder links. This is particularly true because the record of this proceeding demonstrates that sharing is feasible and the Commission's redesignation of FSS as secondary is thus unwarranted.

**1. The Commission Improperly Ignored Evidence that Co-Primary Sharing is Feasible**

Inmarsat believes that the Commission too readily dismissed those comments filed in this proceeding which suggested FSS and terrestrial fixed services could share the band on a co-primary basis. In the Order, the Commission determined that

[A]llowing FSS on an unrestrained co-primary basis would impede any potential widespread use of the band for terrestrial services. Due to the weak signals that are received in the FSS, coordination with the higher-powered terrestrial operations would result in potentially large geographic areas where terrestrial services could not operate to avoid interference to FSS....These coordination requirements and the presence of exclusion zones would significantly increase transaction costs and create a disincentive for development of new terrestrial operations.<sup>5</sup>

Contrary to the Commission's conclusion, the comments suggest that such a scenario would not result from co-primary sharing status. For example, Comsat provided extensive information concerning the ability of FSS and FS to share spectrum in other bands and suggesting that application of these arrangements to the 3650-3700 MHz band can be accomplished successfully. Specifically, Comsat noted that the coordination contours of FSS earth stations "[d]o not represent a zone where

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<sup>5</sup> Order at ¶ 18.

no new FS system can be added.”<sup>6</sup> Instead, they “are simply a tool for making a first cut determination of potential interference paths to be further analyzed.”<sup>7</sup> This view is affirmed by Comsearch, among others, which states that “the implication that earth station facilities require huge ‘exclusion zones’ defined by the coordination contours, in which no fixed service facilities may exist, is simply wrong.”<sup>8</sup> Indeed, several FS commenters themselves noted that there is nothing inherently incompatible between FSS and FS use, and urged exploration of sharing opportunities between these services.<sup>9</sup> These parties also note, for example, the variety of mitigation factors such as terrain shielding which must be factored into such an analysis. Thus, contrary to the Commission’s finding, it is unlikely that co-primary operations would result in “large geographical areas” being made unavailable for FS operations. As to the supposed “transactional costs” which the Commission fears would be added to fixed service operations as a result of co-primary coordination and discourage development of FS operations, the Commission simply fails to cite any support for this conclusion.

Inmarsat further notes that the interest of the FS community in the 3650-3700 MHz band appears from the record to be tepid at best. As Comsat notes, “there is every indication that the 3650-3700 MHz frequencies ‘are the wrong size and the wrong location for any meaningful development of FWA.’”<sup>10</sup> In fact, one FS commenter actually opposed the allocation, arguing that allocation of such a small block of spectrum would discourage rather than encourage the near-term introduction of wireless technology to meet current and future data bandwidth challenges.<sup>11</sup> Given the harm that will be suffered by satellite providers, the limited interest in the band by

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<sup>6</sup> Comment of Comsat Corporation at 10.

<sup>7</sup> *Id.*

<sup>8</sup> Comments of Comsearch at 2.

<sup>9</sup> See, e.g., Comments of Northern Telecom, Inc.

<sup>10</sup> Comsat Reply Comments at 2, quoting Comments of SBC Communications, Inc., at 1.

<sup>11</sup> Comments of Airspan Communication Corporation at 1.

FS operators and the availability of technical means to potentially accommodate both interests on a co-primary basis, Inmarsat believes that the Commission's decision to relegate FSS to secondary status in the band was too hasty and unsupported by the record.

Finally, Inmarsat takes issue with the Commission's view, expressed in paragraph 19 of the Order, that due to the higher frequency band and greater attenuation, 15 MHz at lower S-band frequencies equates to 50 MHz at the higher C-band.<sup>12</sup> Use of a higher frequency band does not lead to a requirement for more spectrum if the same communication requirement is to be supported. It is true that, in FS systems, shorter hop lengths are generally required at higher frequency bands, although this is to some extent compensated for by increased antenna gains for similarly sized antennas. The increased density of transmitters resulting from shorter hop lengths could lead to an increase in the required spectrum over a small area. However, frequencies used in one hop can be reused in other hops sufficiently far away, and this reuse distance is reduced at higher frequencies due to the increased path loss and more directional antennas. The improved spectrum reuse feasibility at higher frequencies offsets the increased spectrum requirement due to the higher density of transmitters and the overall spectrum requirement should therefore be similar regardless of frequency band. Therefore, the Commission's conclusion that 50 MHz of C-band spectrum is somehow equivalent to 15 MHz of spectrum elsewhere is inaccurate from a technical standpoint.

Under these circumstances, Inmarsat believes that the Commission erred in concluding that the 3650-3700 MHz band is an "equivalent and viable substitute" for the 15 MHz of spectrum at 1990-2110 MHz. Rather, the allocation may be much

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<sup>12</sup> Order at ¶ 19.

more spectrum than is required in order to satisfy the requirements of the BBA. Further, the Commission's decision to restrict primary status in this band to terrestrial services will prohibit the substitution from better serving the public interest, convenience and necessity.

## **2. The November 30, 2000 Cut-Off Date Was Arbitrary and Capricious**

Inmarsat also requests reconsideration of the Commission's establishment of November 30, 2000, as the last date for acceptance of applications for new FSS earth stations that will be allowed co-primary status in the 3650-3700 MHz band. Inmarsat fails to see any justification for this arbitrary deadline. Instead, its enforcement will only cause harm to Inmarsat and other FSS operators.<sup>13</sup>

First, a review of the record reveals absolutely no basis for the Commission's decision to choose November 30, 2000 as the cut-off date beyond the Commission's desire to "establish a limit on the acceptance of [FSS earth station] applications and on the construction of FSS facilities."<sup>14</sup> Second, again for reasons unexplained, the Commission chose a cut-off date far in advance of either the deadline for parties seeking reconsideration of the Commission's Order (December 18, 2000), or of the effective date of the new rules promulgated under that Order (February 15, 2001).

Given the ample evidence of uncertainty in the relationship between FSS and FS operations, which uncertainty can only be ameliorated through careful study of the characteristics of the new FS services anticipated to be developed, and given the apparent lack of any particular reason for choosing a cut-off date far in advance of the dates for reconsideration and finalization of issues surrounding this relationship, Inmarsat believes the Commission has acted arbitrarily and capriciously in this matter.

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<sup>13</sup> Inmarsat notes and supports the efforts of the Extended C-Band Ad Hoc Coalition to obtain a stay of this cut-off pending reconsideration of the Commission's Order.

<sup>14</sup> Order at ¶ 29.

As a direct result, Inmarsat and its service providers have been unduly punished by the Commission's actions. Although the Inmarsat-4 satellite contract has been placed, planning for upgrade of existing Land Earth Stations or the procurement of new earth stations to access Inmarsat-4 is still at an early stage. It would simply have not been possible for Inmarsat or its service providers (existing or potential) to submit applications to achieve grandfathered status prior to the Commission's arbitrary deadline. The deadline is therefore unfair to these parties in that it has the effect of cutting off prematurely the possibility of any feederlink access to the Inmarsat-4 satellites from the United States.

As noted above, Inmarsat supports exploration of co-primary frequency sharing between FSS and FS operations. However, if the Commission ultimately rejects such arrangement, Inmarsat would request that, at the very least, the cut-off date should be delayed by a year, to December 31, 2001 or later, in order to allow operators planning to use Inmarsat 4 capacity to complete their immediate expansion efforts and to reconsider their longer term options.

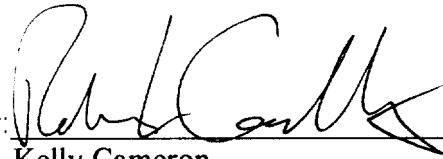
### **Conclusion**

Inmarsat appreciates and supports the development of new and innovative technologies to further the growth of telecommunications around the world. It supports co-primary allocation to the Fixed and Mobile Services in the 3650-3700 MHz bands in order to foster such growth. It is also of the view, however, that both satellite and terrestrial services, which have co-primary status in this band in all the ITU Regions, should be allowed to have equal opportunities for growth through appropriate technical coordination measures. In line with the Commission's pro-competitive policies, it would be most appropriate if both FSS and FS were required to take each other's prevailing environment into account before an additional system

for either one is implemented. Inmarsat urges the Commission to reconsider its decision to reject this policy.

Respectfully submitted,

**INMARSAT LTD.**

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December 18, 2000




## **CERTIFICATE OF SERVICE**

I, Maria Cabico, do hereby certify that copies of the foregoing pleading was served via hand delivery on this 18<sup>th</sup> day of December, 2000, to the following:

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